



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,669	06/29/2001	Gunhee Jang	P20978	9360

7055 7590 10/24/2002

GREENBLUM & BERNSTEIN, P.L.C.
1941 ROLAND CLARKE PLACE
RESTON, VA 20191

EXAMINER

ELKASSABGI, HEBA

ART UNIT	PAPER NUMBER
----------	--------------

2834

DATE MAILED: 10/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/893,669

Applicant(s)

JANG ET AL.

Examiner

Heba Elkassabgi

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

The corrected or substitute drawings were received on 07/25/02. These drawings are approved by the examiner. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 07/25/02 has been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

The subject matter of the stator comprising of tooth-slot structured iron core and winding around the iron core is requested in this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81. No new matter may be introduced in the required drawing.

Claim Objections

Claim 11 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim, or amend the claim to place the claim in proper dependent form, or rewrite the claims in independent form.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1,3,4,5,6,7,and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuragi et al. U.S. Patent 5598047 and further in view of Dunfield et al. U.S. Patent 5694268 and Takemura et al. U.S. Patent 5880545 and Aimiya U.S. Patent 5416655 and Lee et al. U.S. Patent 60710144.

Sakuragi et al. discloses in Figure 15 a disk (36) mounted on an upper face of the outer protruding portion (FF) of the hub (12) and a fixed shaft (stationary shaft)(1) formed unitarily with the housing (EE) at a central portion of the housing (EE) and extending inwardly (DD) into the housing (EE), with a clamp (37) fixed to the upper side the hub (2) by a bolt (clammer screws)(39) to mount the disk (36) to the hub (2). Including a lower ball bearing (8) and an upper ball bearing (7) is ring-shaped and composed on an inner race (NN) and (SS), an outer race (NNA) (SSA) and a plurality of balls. However, Sakuragi does not disclose a base plate, a housing positioned in a central circular hole, a cylindrical hub, and a thrust pad.

Dunfield et al. discloses in Figure 6 an inner protruding portion (AA) fixed between the lower ball bearing (162) and upper ball bearing (160) with a permanent magnet (166) bonded to a lower side (HH) of an outer circumferential face of the outer protruding portion (BB) of the hub (154). The cylindrical hub (154) having an inner protruding portion (AA) from a central portion of an inner circumferential face of the hub (154). In addition to a stator (200) comprising a tooth-slot structured iron core (206a-206l) and a winding (208a-208l) wound around the iron core.

Takemura et al. illustrates in Figure 19 a stator (JJ) bonded to an upper end (GG) of an inner circumferential face of the circular hole; a lower ball bearing (51) bonded to lower side of an outer circumferential face of the fixed shaft (205), an upper ball bearing (242) spaced by a certain interval from the lower bearing (251) and bonded to an upper side of the outer circumferential face of the fixed shaft (205).

Aimiya discloses in Figure 1 a housing (11) that is positioned in the circular hole of the base plate (5) with an outer protruding portion (MM) protruding from an upper side of the outer circumferential face of the hub (15). As well as a cover (6) fixed to the base plate (5) and spaced apart by an interval from an upper side of the clamp (16) and that the hub with the yoke provide a closed magnetic path.

Lee illustrates in Figure 6 a disk-spindle motor having a base plate (124b) having a circular hole at a central portion and a cylindrical hub (128b) with both ends open in which the cylindrical hub (128b) is configured to provide a gap (QQ) between the shaft and the clamp (137a).

It would have been obvious at the time of the invention was made to a person having ordinary skill in the art to modify Sakuragi et al. invention by placing a base plate having a housing with a fixed shaft in the upper central portion of the housing, a stator bonded to the upper portion of the inner circumferential face of the circular hole; a lower and upper ball bearing fixed to the outer circumferential face of the fixed shaft; an outer protruding portion along the an upper side of the outer circumferential face of the hub, in order to reduce a high frequency electromagnetic noise to the magnetic disk, and

provide a simple structure that does not take up much space in resulting in a smaller and highly productive spindle motor.

Claim 2,8,9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunfield et al. U.S. Patent 5694268 and in further view of Sakuragi et al. U.S. Patent 5598047 and Takemura et al. U.S. Patent 5880545 and Aimiya U.S. Patent 5416655 and Lee et al. U.S. Patent 6071014.

Dunfield et al. discloses in Figure 6 a cylindrical hub (154) having an outer protruding portion protruding from an upper side of an outer circumferential face of the hub (154) and a n inner protruding portion (KK) protruding from a lower side of an inner circumferential face of the hub (154) with a permanent magnet (66) bonded to a lower side (HH) of an outer circumferential face of the outer protruding portion (BB) of the hub (154). In addition, figure 8 illustrates the stator (200) comprises of a tooth-slot structured iron core (206a-206l) and a winding (208a -208l) wound around the iron core.

Sakuragi et al. discloses in Figure 15 a fixed cylindrical shaft (stationary shaft)(1) that is formed unitarily with the housing (EE) at a central portion of the housing and extending inwardly (DD) into the housing and having a jaw portion at a central portion of an outer circumferential face of the fixed shaft (1). A clamp (37) that is fixed to the hub (2) by a bolt (clammer screws)(39) to mount the disk (36) to the hub (2). In addition, a disk (36) mounted on the outer protruding portion (FF) of the hub (12).

Takemura et al. illustrates in Figure 19 a stator (JJ) bonded to an upper end portion (GG) of an inner circumferential face of the circular hole of the base plate (201).

Aimiya discloses in Figure 1 a disk –spindle motor having a base plate (124b0) having a circular hole at a central portion of the base plate (300) a housing fixedly positioned in the circular hole of the base plate (5). A cover (6) is fixed to the base plate (5) and spaced apart by an interval from an upper side of the clamp (16) and that the hub with the yoke provides a closed magnetic path.

Lee illustrates in Figure 6 a cylindrical hub (128b) spaced by a certain interval from the thrust pad (142b) that is vertically provided at the fixed shaft (122b) and mounted on the jaw portion (LL) of the fixed shaft (122b) and the thrust pad (142b) is ring –shaped. In addition a cylindrical hub (128b) with both ends open, wherein the cylindrical hub (128b) is configured to provide a gap (QQ) between the shaft (122b) and the clamp (137a).

It would have been obvious at the time of the invention was made to a person having ordinary skill in the art to modify Dunfield et al.'s invention by having a spindle motor having a base plate with a central hole to which a housing is fixedly inserted into the circular hole of the base plate with the fixed shaft formed with the housing and a jaw portion of the shaft located at a central portion of the shaft and a stator that is bonded to the inner circumferential face of the base plate, furthermore a hub having an outer and inner protruding portion of the hub at an outer and inner circumferential face of the hub. With a thrust pad spaced by a certain interval from the fixed shaft. Moreover, a permanent magnet that is located at a lower side of the outer circumferential face of the outer protruding portion of the hub, a disk mounted on to the outer protruding portion and a clamp fixed to the hub with a bolt; for the purpose of reducing the high frequency

electromagnetic noise to the magnetic disk, providing a simple structure that does not take up much space in resulting in a smaller and highly productive spindle motor, dampening the vibration of the stator structure to reduce the generated acoustic noise in the storage device, and to design a magnetic disk apparatus wherein spaces near the cover are effectively utilized.

Response to Arguments

Applicant's arguments filed 07/25/02 have been fully considered but they are not persuasive. In response to applicant's argument that SAKURAGI, TAKEMURA, AIMAYA, LEE, and DUNFIELD do not recite the same intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., prevention of a n increase in the sealing region, advantage of use, prevention of leakage of lubrication, etc.) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

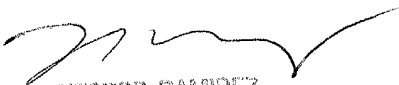
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3432 for After Final communications.

Application/Control Number: 09/893,669
Art Unit: 2834

Page 9

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Heba Y. Elkassabgi
October 19, 2002



NESTOR RAMIREZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2000